

[54] **LOW-VISCOSITY, HIGH-NSI,
HEAT-GELLING SOY ISOLATES**[75] Inventors: **Frank T. Orthoefer**, Decatur, Ill.;
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426/570; 426/582; 426/613; 426/614; 426/653;
426/652; 426/496**[58] Field of Search **426/656, 104, 582, 93,
426/570, 657; 260/123.5**[56] **References Cited****U.S. PATENT DOCUMENTS**

2,495,706	1/1950	DeVoss et al.	99/17
2,561,333	7/1951	Beckel et al.	99/17
3,630,753	12/1971	Melnichyn	99/17
3,642,490	2/1972	Hawley et al.	260/123.5
3,669,677	6/1972	Sair et al.	260/123.5
3,723,407	3/1973	Miller et al.	260/123.5
3,734,901	5/1973	Hayes et al.	260/123.5
3,741,771	6/1973	Pour El et al.	99/79
3,870,801	3/1975	Tombs	426/92
3,870,812	3/1975	Hayes et al.	426/350
3,878,232	4/1975	Hayes et al.	260/412.4
4,072,669	2/1978	Betschart	426/656
4,091,120	5/1978	Goodnight et al.	426/656
4,151,310	4/1979	Mattil et al.	426/656
4,172,828	10/1979	Davidson et al.	426/656

4,188,399	2/1980	Shemer	426/656
4,234,620	11/1980	Howard et al.	426/656

OTHER PUBLICATIONS

Pushi, Modification of Functional Properties of Soy Proteins by Proteolytic Enzyme Treatment, Cereal Chem. 52: 655-664, (1975).

Wolf, Soybean Proteins: Their Functional, Chemical and Physical Properties, Jr. Agr. & Food Chem., vol. 18, No. 6, pp. 969-976, (1970).

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[57]

ABSTRACT

High NSI dry vegetable protein isolates may be effectively utilized to replace egg albumin and/or milk caseinates in food recipes. The isolates are characterized as having an NSI of at least 90, substantially free from vegetable protein hydrolyzates, capable of forming insoluble heat-set gels and having aqueous Brookfield viscosities substantially lower than those which are obtained from conventional undigested vegetable protein hydrolyzates. The relatively neutral pH extraction conditions in the presence of sulfurous ions, coupled with its recovery without chemically or enzymatically hydrolyzing the protein constituents affords an effective method for manufacturing these unique isolate products. The isolates may be used to directly replace either casein or egg albumin in a wide variety of food recipes.

20 Claims, No Drawings